

INCH POUND

MIL-DTL-31010

22 May 1995

DETAIL SPECIFICATION

JACKET, AIRCREW, COLD WEATHER,
WITH REMOVABLE LINER, AND HOOD

This specification is approved for use by all departments and agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers the requirements for a jacket with removable liner and hood.

1.2 Classification. The jacket and liner shall be provided in the following sizes and lengths:

Sizes - X-small, Small, Medium, Large, Extra-Large

Lengths - Short, Regular, Long

The hood shall come in one size only.

NOTE: The lengths (Short, Regular, and Long) may be abbreviated as S, R, & L. X-Small, Small, Medium, Large, and Extra-Large may be abbreviated as XSM, SM, MED, LG, and XLG.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Defense Personnel Support Center, Clothing and Textiles Directorate, Attn: DPSC-FQSC, 2800 South 20th Street, Philadelphia, PA 19145-5099, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 8415

DISTRIBUTION STATEMENT A.

Approved for public release;
distribution is unlimited.

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

- | | |
|-----------|---|
| A-A-50186 | - Cloth, Buckram, Woven and Nonwoven |
| A-A-50195 | - Thread, Aramid |
| A-A-50198 | - Thread, Gimp, Cotton, Buttonhole |
| A-A-50199 | - Thread, Polyester Core, Cotton- or Polyester-Covered |
| A-A-55126 | - Fastener Tape, Hook and Loop, Synthetic |
| A-A-55195 | - Thread: Para-Aramid, Spun, Intermediate Modulus |
| V-B-871 | - Button, Sewing Hole, and Button, Staple, (Plastic) |
| V-F-106 | - Fastener, Slide, Interlocking |
| KK-L-241 | - Leather, Cattlehide, Rigging |
| DDD-L-20 | - Label: For Clothing, Equipage and Tentage (General Use) |
| PPP-B-601 | - Boxes, Wood, Cleated Plywood |
| PPP-B-636 | - Boxes, Shipping, Fiberboard |

MILITARY

- | | |
|-------------|---|
| MIL-B-371 | - Braid, Textile, Tubular |
| MIL-C-3735 | - Cuffs, Knit, Wrist and Ankle, and Cloth, Knitted |
| MIL-F-10884 | - Fasteners, Snap |
| MIL-P-15011 | - Pallets, Material Handling, Wood Post Construction, 4-Way Entry |
| MIL-C-43303 | - Cord, Elastic Cotton |
| MIL-T-43709 | - Tape, Textile, Aramid |

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- MIL-C-43774 - Cloth, Plain or Pajama Check Weave, Aramid
- MIL-C-43824 - Cloth, Synthetic Fur, Knitted
- MIL-C-43842 - Cloth, Oxford, Aramid
- MIL-B-81813 - Batting, Aramid or Nonvoloid Fiber, Quilted
- MIL-C-83429 - Cloth, Plain and Basket Weave, Aramid

STANDARDS

FEDERAL

- FED-STD-595 - Colors Used In Government Procurement
- FED-STD-751 - Stitches, Seams and Stitching

MILITARY

- MIL-STD-129 - Marking for Shipment and Storage
- MIL-STD-147 - Palletized Unit Loads

(Unless otherwise indicated, copies of the above specifications, standards, and handbooks are available from the Standardization Documents Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.2.2 Other Government documents, drawings and publications. The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

Federal Acquisition Regulation (FAR 52.209)

(Copies of the manual may be obtained from the Superintendent of Documents, US Government Printing Office, Washington, DC 20402-0001.)

2.3 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- D 3951 - Standard Practice for Commercial Packaging

(Applications for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103-1187.)

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AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI/ASQC Z1.4 - Sampling Procedures and Tables for
Inspection of Attributes

(Applications for copies should be addressed to the American National Standards Institute, 11 West 42nd Street, New York, NY 10036-8002.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 First article. When specified (see 6.2), a sample shall be subjected to first article inspection, in accordance with 4.3.

3.2 Recycled, recovered, or environmentally preferable material. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.2.1 Basic material. The basic material for the jacket and hood shall be a woodland camouflage printed 6.0 ounce aramid oxford cloth, conforming to the requirements of class 2 of MIL-C-43842. The material for the construction (bagging) of the inner portion of the lower front pockets shall be woodland camouflage printed cloth conforming to class 2, ground shade cloth conforming to class 2, or Camouflage Green 483 matching color chip 34094 of FED-STD-595. The pocket material shall conform to class 1 of MIL-C-43842.

3.2.2 Lining.

3.2.2.1 Jacket lining. The material for the jacket lining shall be plain weave aramid cloth conforming to type II, class 6 of MIL-C-83429. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595.

3.2.2.2 Liner and hood lining. The material for the jacket liner and hood lining shall be aramid or quilted nonvoloid fiber batting in accordance with MIL-B-81813. The color of the outercovering cloth shall be Camouflage Green 483, matching color chip 34094 of FED-STD-595 and the color of the needle thread shall be camouflage green.

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3.2.3 Knitted wrist cuffs. The wrist cuffs shall be a 1 X 1 rib knit aramid conforming to type IV, class 2, size 2 of MIL-C-3735. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595. The cuffs shall be of a seamless construction and doubled to meet the finished measurements. The wrist cuffs shall finish 3-1/2 inches in length, and the opening shall finish 2-3/4 to 2-7/8 inches.

3.2.4 Slide fastener thong and liner attachment loop. The aramid tape shall be 1/4 inch wide conforming to MIL-T-43709. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595. Ends of the thong shall be seared or dipped in a colorless, noncombustible resin (see 6.5). Each slide fastener shall be furnished with a thong of sufficient length to measure 2-1/2 to 3 inches (folded) when attached to the slider pull tab. The thong shall be attached to the slider pull tab by threading one end of thong through end of slide fastener pull tab and, with ends open, bartacking together with two vertical bartacks 1/2 to 3/8 inch apart, with the end of the top bartack 1/4 to 1/2 inch from the end of the slide fastener pull. On the inside inseam of the jacket sleeve, at the hem, there shall be a 1-3/8 to 1-1/2 strip bartacked along both cut edge edges.

3.2.5 Interlining. The buckram for interlining the jacket collar, front facings, and hood brim shall be cotton buckram conforming to type I, natural or bleached of A-A-50186.

3.2.6 Synthetic fur. The synthetic fur for the hood fur ruff shall be natural white, conforming to MIL-C-43824. The natural lay of the fur shall go upwards.

3.2.7 Binding. The material for the binding shall be aramid cloth conforming to MIL-C-43774. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595.

3.2.8 Slide fasteners. The slide fastener for the jacket front closure shall conform to type IV, style 8, size M, of V-F-106, with a short tab pull, 18-1/2 inch brass chain with a black chemical finish, 3/4 inch wide aramid tape, Camouflage Green 483 matching color chip 34094 of FED-STD-595 in color.

The slide fastener for the sleeve utility pocket shall conform to type I, style 7, size M, short tab pull, brass chain with a black chemical finish, 3/4 inch wide aramid tape, Camouflage Green 483 matching color chip 34094 of FED-STD-595 in color and a 4-3/4 inch chain.

3.2.9 Hook and loop tape fasteners. The hook and loop tape fasteners shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595 1 inch wide, conforming to type I or II, class 2 of A-A-55126. The requirements in Table I are for all sizes. The hook and loop tapes shall be cut with either a hot knife or ultrasonically.

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TABLE I. Fastener tape length (Inches)

	Hook	Loop
Jacket		
front closure	2	2
Pocket & pocket flaps	1	1
sleeve tabs	1	3
Hood		
front closure	1 1/2	1
Liner <u>1/</u>	One 6-1/4 inch self attaching strip, (4 inches hook, 2-1/4 inches loop)	

1/ Located on sleeve inseams, right above cuffs, intended to be attached through loop on inside of sleeve cuff on jacket.

3.2.10 Buttons. The buttons for the jacket and liner shall be type II, class D, style 26, 30-line of V-B-871. The buttons shall be Olive Green BP, C.A. 62016, and shall have a dull finish.

3.2.11 Drawcords.

3.2.11.1 Drawcords. The ends of the drawcords and pull cords shall be dipped or impregnated with a cellulose acetate or cellulose butyrate to prevent fraying not less than 1/2 inch or more than 3/4 inch. The free ends of the drawcords shall be knotted after insertion.

3.2.11.2 Jacket drawcords. The cord for the jacket waist and hem drawcords shall be cotton elastic cord, Camouflage Green 483, matching color chip 34094 of FED-STD-595 conforming to class 2 of MIL-C-43303.

Drawcord Cut Lengths

Size	Waist drawcord Tolerance \pm 1 inch	Bottom drawcord Tolerance \pm 1 inch
X-Small	44 inches	50 inches
Small	48 inches	54 inches
Medium	52 inches	58 inches
Large	56 inches	62 inches
X-Large	60 inches	66 inches

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3.2.11.3 Hood drawcords. The braid for the hood drawcords and pull cords shall be Camouflage Green 483, matching color chip 34094 of FED-STD-595 conforming to type IV, class 1; or type V, class 1, of MIL-B-371. Ends of drawcords shall be impregnated or dipped with a cellulose acetate or cellulose butyrate to prevent fraying. This compound may be accepted on the basis of a contractor's certificate of compliance. The hood pull-cord length shall be 50 ± 1 inches long and the brim draw cords shall be 24 ± 1 inches long.

3.2.12 Eyelets. The eyelets shall be corrosion resistant with a black chemical finish and an inside diameter of 7/32 inch. The eyelets for the waist drawcord and hood shall be reinforced with a 1 X 1 inch piece of outer fabric fused to the lining.

3.2.13 Thread. The thread shall be aramid, Camouflage Green 483, or matching color chip 34094 of FED-STD-595, 40 and 60 tex, 2-ply conforming to A-A-50195 or para-aramid, nominal tex 39, 2-ply thread conforming to A-A-55195.

Cotton-covered polyester core thread conforming to ticket No. 50, 2-ply of A-A-50199 may be used as an alternate thread for bartacking. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595.

3.2.14 Gimp. The gimp for reinforcing the buttonholes shall conform to type I or II, size No. 8 of A-A-50198. The color shall be Camouflage Green 483 matching color chip 34094 of FED-STD-595.

3.2.15 Hood brim wire. The wire for the edge of the hood brim shall be bright, 0.080 ± 0.003 inch diameter copper wire, dead soft, and shall not crack or break down when tested for material identification (a certificate of compliance is acceptable), diameter (by a micrometer, take 3 determinations report average to nearest 0.001 inch), resistance to cracking or breaking (the wire shall be bent 360 degrees over a mandrel of the same diameter and then straightened. This bending and straightening shall be repeated once or more in the same place in the wire. Any cracking or breaking observed in the wire shall be considered a test failure). The hood brim wire shall measure $36\text{-}1/2 \pm 1/4$ inches.

3.2.16 Leather keepers. The leather keepers for the hood drawcords shall be made from leather conforming to type II, class 2 of KK-L-241. The color of the leather shall be natural and the thickness shall be not less than 3/16 inch. Reference Figure 3 for dimensions.

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3.2.17 Snap fasteners. The snap fasteners used for attaching the hood to the jacket shall conform to style 2a, brass, finish 2, male and female complete, consisting of stud and eyelet size 1 or 2 and socket conforming to MIL-F-10884, except an uncapped button may be used to attach the socket. As an alternate, a Universal series 200, prong type, snap fastener or equal (see 6.6) may be used, except the material for the spring in the socket component shall conform to the requirements in MIL-F-10884 for spring temper.

3.2.18 Labels.

3.2.18.1 Jacket and liner labels. Each jacket and liner shall have a combination identification-size label, classes 1 and 2, and an instruction label, class 3; or a combination size, identification and instruction label, class 14, conforming to type IV of DDD-L-20. The label color shall be Medium Green, Cable numbers 70043, 70130 or 70131. The instruction label for the jacket shall contain the following information:

1. Wear as an outer garment.
2. Wear button-in liner for added insulation.
3. Adjust closures and drawcords to ventilate; avoid over heating of body.
4. Brush snow or frost from garments before entering heated shelters.
5. For fast drying, remove liner from coat.
6. Lubricate slide fasteners with wax.
7. Machine washing: Use permanent press cycle. Wash in warm water using a mild laundry detergent. Use a fabric softener in the rinse cycle to avoid static electricity.
8. Hand washing: Wash in warm water using mild detergent. Rinse in clean warm water.
9. Field launder: in accordance with Formula XI of FM-10-280 or for Post Laundry, Formula X.
10. DO NOT USE STARCH OR BLEACH.
11. Drying: Dry at medium heat. Use a fabric softener to reduce static electricity. To drip dry, remove from water and place on a rustproof hanger.

The instruction label for the removable liner shall contain the following information:

1. Dry removable liner and jacket separately when damp or wet.
2. Wash by hand or machine launder on permanent press cycle in warm water with a mild laundry detergent. Rinse thoroughly. Drip dry or machine dry at medium heat. Use a fabric softener in either the wash or the dry cycle to reduce static electricity.
3. Field launder in accordance with Formula XI of FM-10-280 or for post laundry, Formula X.
4. DO NOT USE STARCH OR BLEACH.

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3.2.18.1.1 Label placement. The jacket and the jacket liner size label shall be stitched on all four sides (through all plies on the liner, and through the lining fabric on the jacket) on the inside center of the back, starting 1 to 1-1/2 inches below the finished neck edge. The top edge of the identification label shall abut the bottom edge of the size label or be caught in the stitching. The top edge of the instruction label shall abut the bottom edge of the identification label or be caught in the stitching.

If a combination size and identification label is used, it shall be positioned 1 to 1 1/2 inches below the neck edge, with the instruction label positioned abutted to the bottom edge of the identification label or caught in the stitching.

If a combination size, identification and instruction label is used, it shall be positioned 1 to 1 1/2 inches below the neck edge.

3.2.18.2 Hood label. The hood shall have a class 1 identification label and a class 3 instruction label conforming to type VI of DDD-L-20. The label shall be located on the right side panel 2 inches from bottom edge. The color of the label shall be Medium Green, Cable numbers 70034, 70130 or 70131. The instruction label shall contain the following information:

1. Fasten hood snaps to snaps on jacket under collar.
2. Adjust hood draw cords for comfort, securing keeper to maintain fit. Adjust hood brim for maximum protection.
3. Open front closure or remove hood from head for ventilation.
4. Shake frost accumulation from fur frequently.
5. Machine washing: Use permanent press cycle. Wash in warm water using a mild laundry detergent. Use a fabric softener in the rinse cycle to reduce static electricity.
6. Hand launder: Wash in warm water using a mild detergent. Rinse in clean water.
7. Field launder: in accordance with Formula XI of FM-10-280 or Post Laundry, Formula X.
8. DO NOT USE STARCH OR BLEACH.
9. Drying: Dry at low heat. Use a fabric softener to reduce static electricity. To drip dry, shake out water and hang to dry.

3.2.18.3 Label/tag. Each item shall be individually bar-coded with a paper tag for personal clothing items. The paper tag shall be standard bleached sulfate having a basis weight of 100 pounds. The paper used for the tags shall have a smooth finish to accept thermal transfer and direct printing. The tags shall have a hole and shall be attached to each item by a fastener, clearly legible and readable by a scanner.

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The bar coding element shall be a 13 digit national stock number (NSN). The bar code type shall be a medium to high code density and shall be located so that it is completely visible on the item when it is folded and/or packaged as specified and so that it causes no damage to the item.

3.2.18.4 Size information. The size information shall be printed in letters and numeral not less than 10 pont and shall be as follows:

X-Small Short

Height: From 63 to 67 in.
Chest Mn: Up to 33 in.
Chest Wn: Up to 36 in.
Stock No.
NATO Size: 6070/7484

X-Small Regular

Height: From 67 to 71 in.
Chest Mn: Up to 33 in.
Chest Wn: Up to 36 in.
Stock No.
NATO Size: 7080/7484

X-Small Long

Height: From 71 in. and up
Chest Mn: Up to 33 in.
Chest Wn: Up to 36 in.
Stock No.
NATO Size: 8090/7484

Small Short

Height: From 63 to 67 in.
Chest Mn: From 33 to 37 in.
Chest Wn: From 36 to 40 in.
Stock No.
NATO Size: 6070/8494

Small Regular

Height: From 67 to 71 in.
Chest Mn: From 33 to 37 in.
Chest Wn: From 36 to 40 in.
Stock No.
NATO Size: 7080/8494

Small Long

Height: From 71 in. and up
Chest Mn: From 33 to 37 in.
Chest Wn: From 36 to 40 in.
Stock No.
NATO Size: 8090/8494

Medium Short

Height: From 63 to 67 in.
Chest Mn: From 37 to 41 in.
Chest Wn: From 40 to 44 in.
Stock No.
NATO Size: 6070/9404

Medium Regular

Height: From 67 to 71 in.
Chest Mn: From 37 to 41 in.
Chest Wn: From 40 to 44 in.
Stock No.
NATO Size: 7080/9404

Medium Long

Height: From 71 in. and up
Chest Mn: From 37 to 41 in.
Chest Wn: From 40 to 44 in.
Stock No.
NATO Size: 8090/9404

Large Short

Height: Up to 67 in.
Chest: From 41 to 45 in.
Stock No.
NATO Size: 6070/0414

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Large Regular

Height: From 67 to 71 in.
 Chest: From 41 to 45 in.
 Stock No.
 NATO Size: 7080/0414

Large Long

Height: From 71 in. and up
 Chest: From 41 to 45 in.
 Stock No.
 NATO Size: 8090/0414

X-Large Short

Height: Up to 67 in.
 Chest: From 45 in. and up
 Stock No.
 NATO Size: 6070/1424

X-Large Regular

Height: From 67 to 71 in.
 Chest: From 45 in. and up
 Stock No.
 NATO Size: 7080/1424

X-Large Long

Height: From 71 in. and up
 Chest: From 45 in. and up
 Stock No.
 NATO Size: 8090/1424

3.3 Design

3.3.1 Jacket. The lined jacket shall have a collar with three snap fasteners for attaching the hood, 2 piece set-in long sleeves, shoulder loops with a button and buttonhole, a waist tunnel with drawcord and hem drawcord, slide fastener front closure with a top snap and three hook and loop fastener tape closures. There shall be two bellows-type chest pockets with flaps, two lower inside hanging with flaps and a utility pocket on the left sleeve with a slide fastener closure and bellows bottom. The pocket flaps shall have hook and loop fastener tape closures. The sleeves shall have elbow patches, adjustable cuff tabs with hook and loop fastener tapes, and a loop on the inside of the cuff as a means to anchor the liner sleeve to the jacket sleeve. The jacket shall have buttons on the inside facings and neck for attaching a removable liner.

3.3.2 Liner. The cardigan-style removable liner shall be collarless, with long sleeves, knit wrist cuffs, and bound edges on neck, front, hem and underarm opening. There shall be 2 buttonholes through a neck reinforcement piece and on the front opening to attach the liner to the jacket.

Buttons are provided along the front edge of the liner for buttoning the liner together to wear alone. The sleeve joining seam shall be left partially open at the armhole, for use as a vent. The liner shall have a hook and loop fastener tape strip sewn into the sleeve inseam above the cuff for attachment to the jacket loop.

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3.3.3 Hood. The hood shall snap onto the jacket beneath the collar. It shall have 2 drawcord adjusters with leather keepers exiting through eyelets at the back of the hood and the brim, a brim with enclosed wire, and a fur ruff. The hood shall close left over right in the front with a hook and loop fastener. The hood brim shall be quilted according to the marks on the pattern. The hood can be worn over the SPH-4A/B helmets.

3.4 Figures. The figures are furnished for information purposes only. When inconsistencies exist between the written purchase description and the figures, the written purchase description shall govern.

3.5 Patterns. Standard patterns to be used to cut working patterns will be furnished by the Government (see 6.3). The working patterns shall be identical to the Government patterns. Neither the Government patterns nor the working patterns shall be altered in any way, except that additional notches for use during construction are allowed on the working patterns. Also, minor modifications are permitted where necessary when using automatic equipment. These modifications shall not alter the dimensional, serviceability, or appearance requirements cited in the specification.

3.5.1 Pattern parts. The component parts of the jacket shall be cut from materials specified in accordance with pattern parts indicated in Table II.

TABLE II. Pattern parts

<u>Material</u>	<u>Pattern nomenclature</u>	<u>Cut parts</u>
Basic material	<u>Jacket parts</u>	
	Front	2
	Back	1
	Left front facing	1
	Right front facing	1
	Top sleeve	2
	Top sleeve elbow patch cut	2
	Under sleeve	2
	Under sleeve elbow patch	2
	Top collar	1
	Under collar	1
	Breast pocket	2
	Breast pocket flap	4
	Lower pocket flap	4
	Lower hanging pocket	2
	Lower pocket welt & bearer	2
	Utility pocket	1
Pencil pocket	1	

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TABLE II. Pattern parts - Continued

<u>Material</u>	<u>Pattern nomenclature</u>	<u>Cut parts</u>
Basic material (contd.)	<u>Jacket parts</u> (contd.)	
	Slide fastener cover	1
	Waist tunnel	1
	Shoulder loop	4
	Neck reinforcement	1
Interlining	Front interlining	2
	Collar interlining	1
Lining material	Front lining	2
	Back lining	1
	Top sleeve lining	2
	Under sleeve lining	2
Batting aramid quilted	<u>Liner parts</u>	
	Body liner	1
	Top sleeve liner	2
	Under sleeve liner	2
Basic material	<u>Hood parts</u>	
	Hood side	2
	Hood back	2
	Hood under brim	1
	Hood top brim	1
Interlining	Brim interlining	1
Synthetic fur	Fur strip	1
Batting aramid quilted	Hood side lining	2
	Hood back lining	2

3.6 Construction

3.6.1 Seams and stitching. Seams and stitching used in the fabrication of the jacket, liner and hood are as specified in Tables III, IV, and V, and shall conform to FED-STD-751. If not specified, seaming shall be accomplished by Stitch Type 301. There shall be 10 to 14 stitches per inch. No cut or raw edges shall be visible. All seams shall be properly forced out and shall not contain any folds. No seam or component shall be twisted, puckered, or pleated, and no part of the jacket shall be caught in an unrelated seam or operation. The construction shall not interfere with the movement of the slider. Gage of stitching for hook and loop fastener tape shall be 1/8 to 3/16 inch from the edges. Ends of all stitchings shall be backstitched or overstitched. Bartacks may be used to reinforce stress areas.

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TABLE III. Jacket seam and stitching chart

<u>Pocket flaps</u> 3/16 to 1/4 inch top stitch.	301 or 401 301 or 401	SSe-2(a) SSe-2(b)
<u>Square bellow breast pockets</u> Shall be set with fullness at top. The width of the top shall be determined by size of finished flap. The bellow shall be closest to the side seam. The pocket shall be edge stitched 1/16 to 1/8 inch from the edge.		
<u>Lower welt pockets</u>		
Safety stitch pocket bags.	515 or 516 or 519	
<u>Jacket</u> Side seams, shoulder seams and sleeve inseams.	301 or 401	LSc-2
Armhole seams	301 or 401	LSbm-4a and LSbm-4b
Sleeve patch.	301	LSd-2
<u>Lining</u> Side, shoulder and sleeve inseams	515 or 516 or 519	SSa-2
Sleeve setting (safety stitch)	515 or 516 or 519	SSa-2
Lining shall be attached to front facings and raise stitch 1/16 to 1/8 inch from turned edge	515 or 516 or 519 301 or 401	LSc-2
<u>Hook and loop</u> 1/8 to 3/16 inch from edges	301	LSbj-1
<u>Shoulder loops</u> Top stitch 3/16 to 1/4 inch from edges.	301 or 401 301	SSe-2(a) SSe-2(b)
<u>Waist drawcords</u> Overedge tunnel strip edges.	502 or 503	EFd-1
Seam tunnel strip to coat.	301	LSbj-1

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TABLE III. Jacket seam and stitching chart - Continued

<u>Waist drawcords</u>		
Overedge tunnel strip edges.	502 or 503	EFd-1
Seam tunnel strip to coat.	301	LSbj-1
or		
Turn in tunnel edges and seam to coat.	301	LSd-1 (each edge)
<u>Front slide fastener</u>		
Shall be attached through the front, interlining and facing with 2 rows of stitching 3/16 to 1/4 inch apart, 1/16 to 3/32 inch from back edge of tape.	301	
<u>Hem</u>		
Hem shall finish 1 inch. Drawcord shall exit out open front edge on right side and through an eyelet marked on pattern on the left side.	301	EFb-1

3.6.2 Utility pocket. The combination pencil and utility pocket shall finish 4-1/2 inches by 5-3/4 inches. The top edge of the pencil pocket shall be hemmed. The side and bottom edges of pencil pocket shall be turned under and stitched to the utility pocket, and the vertical stitching shall form two compartments. The bottom corners of the utility pocket shall be stitched closed to form a bellows bottom. The slide fastener shall close on the top.

TABLE IV. Jacket liner seam and stitching chart

Shoulder	LSbm-3 (b)	515 or 516
Sleeve seam	LSbm-3 (a)	515 or 516
Armhole	SSa-1	515 or 516
Cuff joining seam	BSc-1	301
Bind edges of liner and armholes	BSc-1	301

3.6.3 Buttonholes. The buttonholes shall be eyelet end taper-bar type worked over gimp and placed according to marks on the pattern. The finished cut length shall be 3/4 inch. All buttonholes shall be clean cut and uniform in appearance.

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TABLE V. Hood seam and stitching chart

Joining of back panels and center back seam.	301 or 401	LSc-2
Joining of back panels and center back seam of lining.	301	SSa-1
Seam cut across top of hood, and top of hood lining.	301 or 401	
Turn and raise stitch 1/16 to 1/8 inches from edge.	301	LSq-2(b)
<u>Brim</u>		
Seam top brim to front edge of Hood and seam under-brim to front edge of hood lining.	301 or 401 301 or 401	LSq-2(a) LSq-2(a)
<u>Tunnel</u>		
Seam top brim to under brim along front edge and raise stitch 1/8 inch from the seam line.	301 or 401	LSq-2(b)
Form tunnel on edge of brim (for wire) with a row of stitching 1/2 to 5/8 inch from outer edge and through all plies.	301	OSa-1
Quilt brim per marks on pattern.	301	SSv-1
Fur ruff shall be positioned adjacent to tunnel, 3/4 to 7/8 inch from the outer brim edge, stitch 1/8 to 3/16 inch from the edge of the ruff.	301	LSbj-1

3.6.4 Bartacks. All bartacks shall be 1/2 inch long, with 28 stitches per bartack. They shall be located in the following areas:

Jacket

Breast pocket- Top outer edges of pocket opening shall have vertical bartacks (superimposed on stitching), and bottom of pocket shall have horizontal stitch through all plies of the pocket from front bottom edge continuing for 1-1/4 inches. Sew bartack (superimposed on stitching) on edge of stitching.

Lower pockets- Vertically bartack both sides of welt opening.

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Waist tunnel- Horizontally bartack waist tunnel opening, at beginning and ends of stitching on fronts (superimposed on stitching).

Front slide fastener- 1 horizontally across top and 1 horizontally across bottom edge of slide fastener.

Utility pocket- Vertically superimposed on stitching between each pencil opening.

Sleeve tabs- Vertically along top corner of sleeve tab superimposed on back arm seam, and horizontally superimposed on bottom hem through back arm sleeve seam.

Sleeve inseams- horizontally, 3/16 inch from bottom.

or

Liner armhole- Bartack across width of binding on front and back of sleeve joining seam.

Liner attachment loop- position 1 1/2 inch piece of aramid tape horizontally at joining seam of liner and basic material at cuff centered from underarm seam, and bartack vertically through ends.

Hood- Bartack the full width of the wire tunnel not more than 1/2 inch from ends of wire loops on each side of hood. Bartack one end of each face drawcord to brim and hood joining seam allowances as indicated on pattern. Bartack cords as indicated on Figure 3.

3.7 Sizes and measurements. The finished jacket and jacket liner shall conform to the measurements below. All measurements are in inches.

TABLE VII. Jacket, Aircrew, Cold Weather
(with Removable liner)

1/2 Chest measurement <u>1/</u>	Short	Regular	Long	Tolerance
X-Small	22	22	22	$\pm 3/4$
Small	24	24	24	$\pm 3/4$
Medium	26	26	26	$\pm 3/4$
Large	28	28	28	$\pm 3/4$
X-Large	30	30	30	$\pm 3/4$

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TABLE VII. Jacket, Aircrew, Cold Weather
(with Removable liner) - Continued

Back length <u>2/</u>				
X-Small	29-1/4	30-3/4	32-1/4	+1
Small	29-3/4	31-1/4	32-3/4	+1
Medium	30-1/4	31-3/4	33-1/4	+1
Large	30-3/4	32-1/4	33-3/4	+1
X-Large	31-1/4	32-3/4	34-1/4	+1
Sleeve length <u>3/</u>				
X-Small	18-1/2	19-1/4	20	+ 3/4
Small	18-1/2	19-1/4	20	+ 3/4
Medium	18-1/2	19-1/4	20	+ 3/4
Large	18-1/2	19-1/4	20	+ 3/4
X-Large	18-1/2	19-1/4	20	+ 3/4

- 1/ Measurement shall be taken at the base of the armhole, from folded edge to folded edge with front closed.
- 2/ Measurement shall be taken along center back from undercollar seam to extreme bottom edge of coat.
- 3/ Measurement shall be taken from base of armhole along forearm seam to bottom of sleeve.

TABLE VIII. Liner for Cold Weather Jacket

1/2 Chest measurement <u>1/</u>	Short	Regular	Long	Tolerance
X-Small	23	23	23	+ 3/4
Small	25	25	25	+ 3/4
Medium	27	27	27	+ 3/4
Large	29	29	29	+ 3/4
X-Large	31	31	31	+ 3/4
Back length <u>2/</u>				
X-Small	28	29-1/2	31	+1
Small	28-1/2	30	31-1/2	+1
Medium	29	30-1/2	32	+1
Large	29-1/2	31	32-1/2	+1
X-Large	31	31-1/2	33	+1

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TABLE VIII. Liner for Cold Weather Jacket - Continued

1/2 Chest measurement <u>1/</u>	Short	Regular	Long	Tolerance
Sleeve length <u>3/</u>				
X-Small	23-3/4	24-3/4	25-3/4	+ 1/2
Small	24-1/4	25-1/4	26-1/4	+ 1/2
Medium	24-3/4	25-3/4	26-3/4	+ 1/2
Large	25-1/4	26-1/4	27-1/4	+ 1/2
X-Large	25-3/4	26-3/4	27-3/4	+ 1/2

- 1/ Measurement shall be taken with the liner flat and the front edges abutting, from folded edge to folded edge at the base of the armhole.
- 2/ Measurement shall be taken along center back from edge of neck to bottom edge of liner.
- 3/ Measurement shall be take from top of binding at armhole along overedged backarm seam to bottom of knitted cuff. (Cuff = 3 1/2 inches).

TABLE IX. Hood finished measurements

Location	Measurement (inches)	Tolerance (inches)	
Overall length <u>1/</u>	30	+ 3/4	- 1/2
Neck <u>2/</u>	30	+ 3/4	- 1/2
Brim width <u>3/</u>	4 3/4	+ 1/4	- 1/4

- 1/ Measurement taken from bottom of hood to front edge brim in alignment with center seam at top of hood.
- 2/ Neck measurement taken along bottom of hood from front edge to front edge.
- 3/ Brim width is measured in alignment with center panel seam at top of hood.

3.8 Workmanship. The finished jacket shall conform to the quality of product established by this document. The occurrence of defects shall not exceed the contractor's own quality assurance standards and the quality assurance standards defined by the technical data in the bid package.

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4. VERIFICATION

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this purchase description shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the purchase description shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Certificate of compliance. Where certificates of compliance are submitted, the Government reserves the right to check test such items to determine the validity of the certification.

4.2 Classification of inspection. The inspection requirements specified herein are classified as follows:

1. First article inspection (see 4.3)
2. Quality conformance inspection (see 4.4)

4.3 First article inspection. The first article, submitted in accordance with 3.1 (see 6.4), shall be inspected for compliance with design, construction, workmanship and dimensional requirements.

4.4 Quality conformance inspection. Sampling for inspection shall be performed in accordance with ANSI/ASQC Z1.4, except where otherwise indicated.

4.4.1 Component and material inspection. In accordance with 4.1, components and materials shall be tested in accordance with all the requirements of referenced specifications, drawings, and standards unless otherwise excluded, amended, modified, or qualified in this purchase description or applicable procurement documents.

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4.4.2 Examination of the end item. The coat, removable liner, and hood shall be examined for the following defects:

<u>Examine</u>	<u>Defect</u>
Cutting	Any component not cut in accordance with directional lines on patterns or not in accordance with specified requirements.
Cleanness	Spot or stain on outside, overall uncleanness, two or more shade or size tickets not removed.
Design	Any characteristic not in accordance with the specified requirements.
Material	Any hole, cut, tear, needle chew that may develop into a hole, burn, darn, smash, mend, multiple float, scissor or knife cut, slub or shade bar, color not as specified, any misweave, dyestreak, shaded parts, loose or course yarn on outside, color not as specified.
Quilted batting	More than 1-1/2 inches of broken or missing quilted stitching in quilted liner. Batting in quilted liner quilted unevenly resulting in a thick or thin place.
Component assembly	Any component part misplaced, omitted, not as specified, or not securely affixed, any component part twisted, distorted, pleated, damaged or otherwise defective. Breast and lower pockets 1/2 inch or more out of alignment, fronts uneven at top or bottom by 1/4 inch or more.
Seam and stitching	Seam irregular, unevenly gaged, raw edges exposed, missing, open <u>1</u> /, weak, stitching broken, loose or tight tension, skipped, puckered, broken, twisted, pleated or wavy, ends of stitching backtacked or overlapped by another seam less than 1/2 inch, part of item caught in unrelated operation or stitching, edge or raised stitching sewn to close to edge resulting in damaged cloth, seam allowance not as specified. Double rows of stitching not parallel.

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Buttonholes	Not corresponding to size of button, slanted, uncut, positioned vertically, loose tension, stitches broken or skipped, not shank wrapped, ragged edges in any buttonhole affecting appearance, end of buttonhole insecurely tacked, gimp omitted.
Buttons	Missing, type not as specified, omitted, not securely sewn, loose, or broken, gimp omitted, any button more than 1/4 inch out of alignment with buttonhole.
Hook and loop fastener	Hook and loop out of alignment or not able to be fastened properly, width of hook and loop not as specified, not sewn 1/16 to 1/8 inch from the edge.
Labels	Missing, incorrect or illegible, not positioned, or stitched as specified.
Bar code label/tag	Bar code omitted or not readable by scanner Human-readable interpretation (HRJ) omitted or illegible Not visible on folded, packaged item Causes damage to the item
Drawstrings	Drawstrings of the jacket weakened by broken or fraying strands, ends not tipped or impregnated as specified.
Hood	Synthetic fur containing any cut, hole, tear, mend, bare spot or thin place. Synthetic fur exhibiting an uncleanness or objectionable odor.

1/ An open seam shall be classified as open when one or more stitches joining a seam are broken or when two or more consecutive skipped or run-off stitches occur. On double lapped seams, a seam is classified as open when either one side or both sides of seam are open.

4.4.3 Examination of packaging requirements. An examination shall be made to determine that packaging, packing, and marking comply with Section 5 requirements of this purchase description. Defects shall be scored in accordance with the list below. The sample unit shall be one shipping container fully prepared for delivery. Defects of closure listed below shall be examined on shipping containers fully prepared for delivery. The lot size shall be on the number of shipping containers in the end item inspection lot.

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<u>Examine</u>	<u>Defect</u>
Marking (exterior and interior)	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.
Materials	Any component missing, damaged, or not as specified.
Workmanship	Inadequate, application of components, such as: incomplete closure of container flaps, loose strapping, improper taping, inadequate stapling bulged or distorted container.
Content	Number of items per shipping container is more or less than required. Size shown on one or more items not as specified on shipping container. <u>1/</u>

1/ For this defect, one item from each shipping container in sample shall be examined.

4.4.4 Palletization examination. An examination shall be made to determine that palletization complies with the section 5 requirements. Defects shall be scored in accordance with the list below. The sample unit shall be one palletized unit load fully packaged. The lot size shall be the number of palletized unit loads in the end item inspection lot.

<u>Examine</u>	<u>Defect</u>
Finished dimensions	Length, width, or height exceeds specified maximum requirements.
Palletization	Pallet pattern not as specified. Interlocking of loads not as specified. Load not bonded with required straps as specified.
Weight	Exceeds maximum load limits.
Marking	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.

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5. PACKAGING

5.1 Preservation. Preservation shall be level A or C as specified (see 6.2).

5.1.1 Level A. Each jacket with attached hood and liner, with slide fastener closed, shall be laid out flat, front down. The sides of the jacket shall be folded to the center of the back lengthwise and the sleeves shall be placed lengthwise over the folded sides. The jacket shall be folded in half by bringing bottom edge up to the collar. The completed folded jacket shall measure approximately 20 inches in length and 16 inches in width. Each folded jacket shall be inserted in a snug-fitting, clear polyethylene film bag of 0.0015 inch thickness ($\pm 20\%$ tolerance). Bag shall be of tuck-in or reverse flap-type closure.

5.1.2 Commercial. Each jacket shall be preserved in accordance with the applicable requirements of ASTM D 3951.

5.1.3 Individual component packaging. When procured separately, each jacket, liner, or hood shall be packed in a snug-fitting, clear polyethylene film bag with a minimum thickness of 0.0015 inch. Bag shall be of a tuck-in or reverse-flap-type closure.

5.2 Packing. Packing shall be level A, B, or C as specified (see 6.2).

5.2.1 Level A. Twelve (12) jackets, of one size, preserved as specified in 5.1, shall be packed in a snug-fitting exterior-type shipping container conforming to PPP-B-601, overseas type. Closure and strapping shall be in accordance with the appendix of the container specification.

5.2.2 Level B. Twelve (12) jackets, of one size, preserved as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to type CF, class domestic, variety SW, grade 275, style RSC-I of PPP-B-636. The liner shall be as specified in PPP-B-636. Closure and strapping shall be in accordance with the appendix of the container specification.

5.2.2.1 Weather-resistant fiberboard container. When specified (see 6.2), the shipping container shall be a grade V3c, W5c, or W6c fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with the appendix of the container specification.

5.2.3 Commercial. Twelve (12) jackets, of one size, preserved as specified in 5.1, shall be packed in accordance with the applicable requirements of ASTM D 3951.

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5.2.4 Individual component packing. When procured separately, twelve (12) jackets, liners, or hood, packaged as specified shall be packed in a snug-fitting fiberboard shipping container conforming to type CF, class domestic variety SW, grade 275, style RSC-L of PPP-B-636. Liner, closure, and strapping shall be in accordance with the appendix of the container specification.

5.3 Palletization. When specified (see 6.2), jackets packed as specified in 5.2 shall be palletized on a 4-way, type I, style 1, 1A, or 1B, size A class 1 pallet fabricated in accordance with MIL-P-15011. Each prepared load shall be in accordance with load type I or Ia and bonded with the applicable strap bonding or film bonding means specified in MIL-STD-147. The pallet pattern shall be in accordance with the appendix of MIL-STD-147. Interlocking of loads shall be effected by reversing the pattern of each course. If the container is of a size which does not conform to any of the patterns specified in MIL-STD-147, the pallet pattern used shall first be approved by the contracting officer.

5.3.1 Individual component palletization. When specified, jackets, liners, or hoods shall be palletized on a 4-way entry, winged-type pallet in accordance with type Ia of MIL-STD-147.

Each prepared load shall be bonded with primary and secondary straps in accordance with bonding means C and D or film bonding means F or G.

5.4 Marking. In addition to any special marking required by the contract or purchase order, unit packages, or shipping containers, as specified (see 6.2), and palletized unit loads shall be marked in accordance with MIL-STD-129.

5.4.1 Individual component marking. In addition to any special marking required by the contract or purchase order, shipping containers and palletized unit loads shall be marked in accordance with MIL-STD-129.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The jacket with removable liner and hood is intended to be worn as a component of the Aircrew Cold Weather Clothing System.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number and date of this specification.
- b. Size and lengths required (see 1.2.1).

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- c. Issue of DODISS to be cited in the solicitation and, if required, the specific issue of individual documents referenced (see 2.2.1 and 2.3).
- d. When first article inspection is required, (see 3.1) the item will be tested and should be a first article sample. The contracting officer should include specific instructions in acquisition documents regarding arrangement for examinations, quantity, and testing and approval.
- e. Selection of applicable levels of preservation and packing (see 5.1 and 5.2).
- f. When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
- g. When palletization is required (see 5.3).

6.3 Samples. For access to samples, address the contracting activity issuing the invitation for bids.

6.4 First article. When a first article inspection is required, it shall be inspected and approved under the appropriate provisions of FAR 52.209-4. The first article shall be a preproduction sample. The contracting officer should also include specific instructions in all acquisition documents regarding arrangements for selection, inspection, and approval of the first article.

6.5 Suggested resin. A suggested resin for dipping ends of slide fastener thongs is "No Fray No. 64" Champion packaged products, Inc., 4939 South Austin Avenue, Chicago, IL 60638

6.6 Equal items. Prior to use of an "equal item", the contractor shall submit the item with supporting data to the contracting officer for subsequent approval or disapproval.

6.7 Subject term (key word) listing.

Clothing
Coat
Hooded garment
Lined coat
Outercoat

Custodian:

Army - GL

Review Activity:

Army - MD

Preparing activity:

DLA - CT

Project No. 8415-0983

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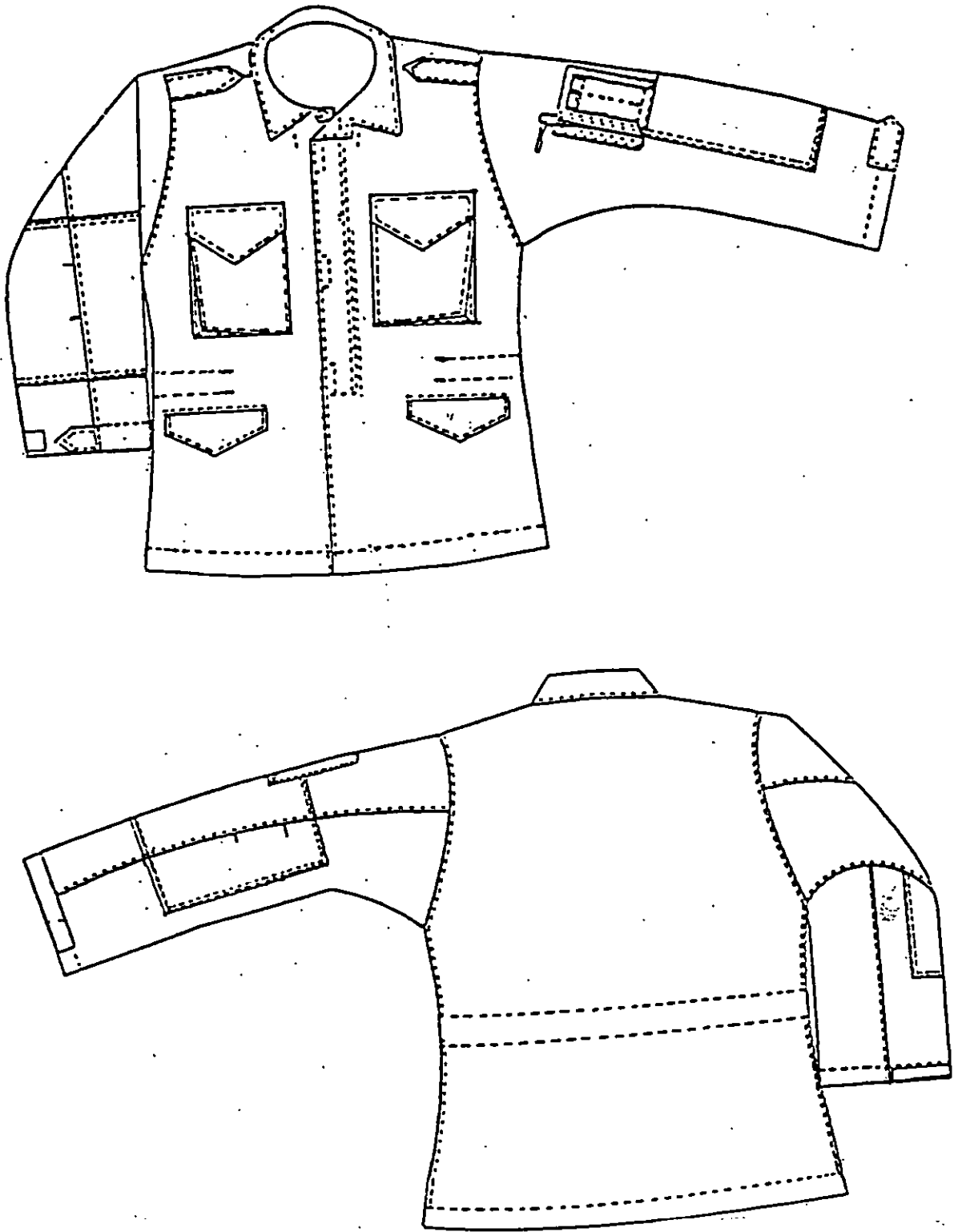


FIGURE 1. Jacket

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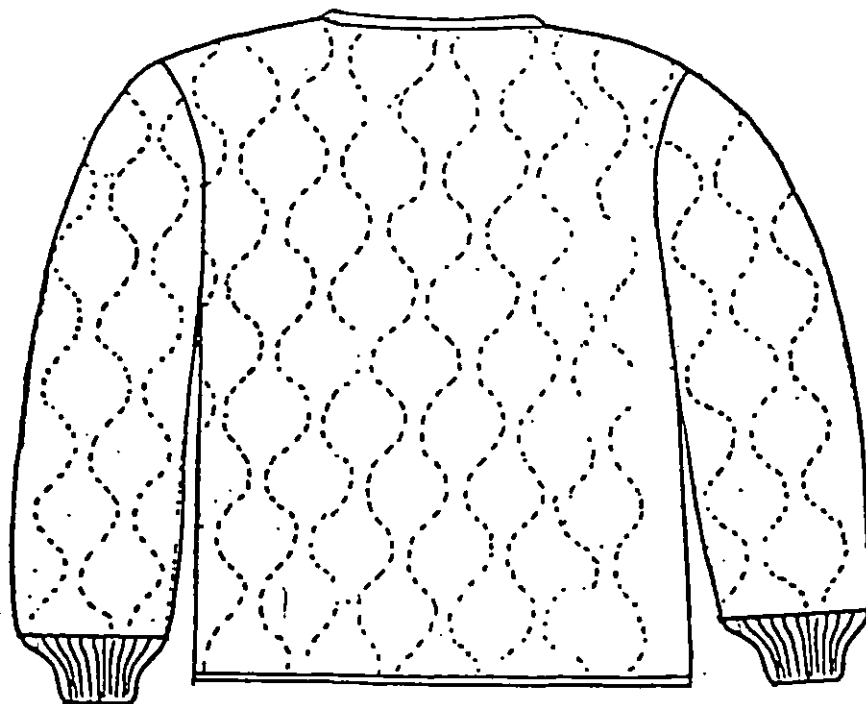
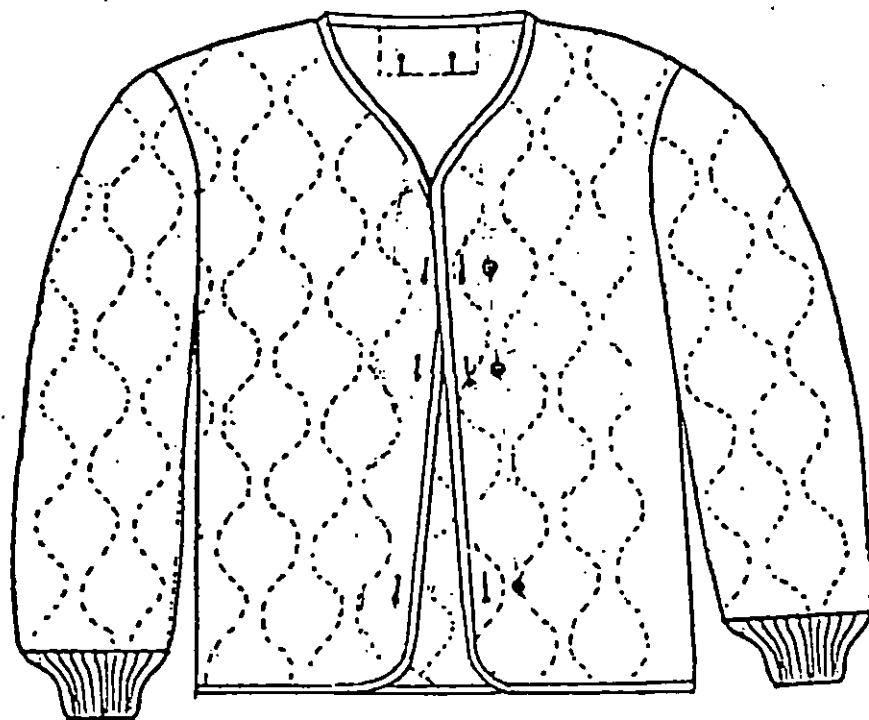


FIGURE 2. Removable liner

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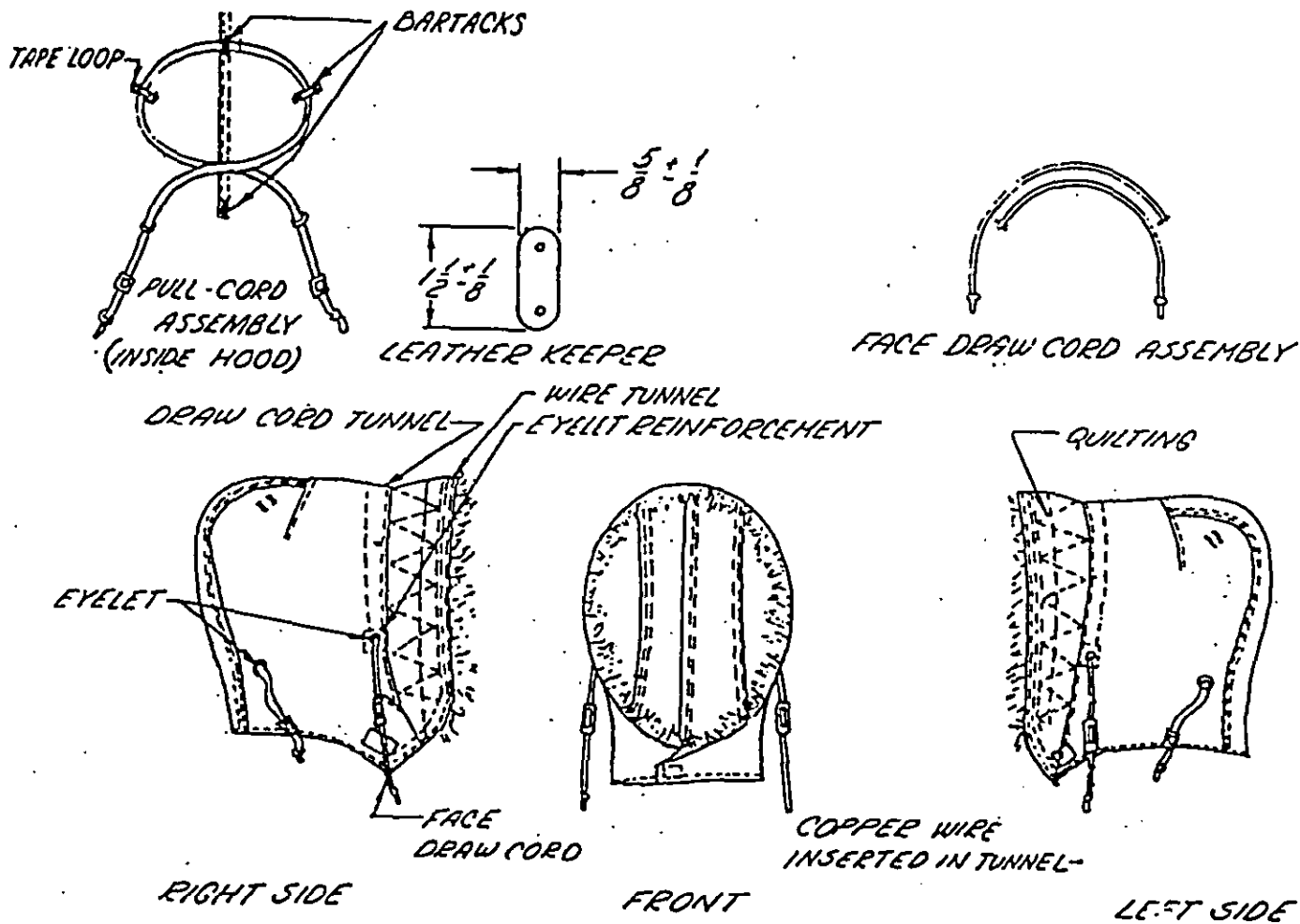


FIGURE 3. Hood

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-DTL-31010

2. DOCUMENT DATE (YYMMDD)
950522

3. DOCUMENT TITLE

Jacket, Aircrew, Cold Weather, With Removable Liner, and Hood

4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME (Last, First, Middle Initial)

b. ORGANIZATION

c. ADDRESS (Include Zip Code)

d. TELEPHONE (Include Area Code)
(1) Commercial
(2) AUTOVON
(If applicable)

7. DATE SUBMITTED
(YYMMDD)

B. PREPARING ACTIVITY

a. NAME
Defense Personnel Support Center
ATTN: DPSC-FQSC (12-3-C)

b. TELEPHONE (Include Area Code)
(1) Commercial
215-737-8103

(2) AUTOVON
444-8103

c. ADDRESS (Include Zip Code)
2800 South 20th Street
Philadelphia, PA 19145-5099

IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:
Defense Quality and Standardization Office
5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466
Telephone (703) 756-2340 AUTOVON 289-2340